

Violent Deaths in Rhode Island, 1999-2002

Jay S. Buechner, PhD,
Elizabeth A. Laposata, MD,
Wendy Verhoek-Oftedahl, PhD,
and Edward F. Donnelly, RN, MPH

In 2000, there were nearly 51,000 deaths nationally caused by violence, including homicides, suicides, and other violence.¹ Other major categories of injury deaths have federally-supported data systems drawing on multiple sources to support epidemiologic studies and program evaluations, despite comprising fewer deaths per year than violence. For motor vehicle deaths, the National Highway Traffic Safety Administration (NHTSA) has sponsored the Fatality Analysis and Reporting System (FARS) for several decades. For occupational injury deaths, the Bureau of Labor Statistics developed the Census of Fatal Occupational Injuries (CFOI) early in the last decade.

The Institute of Medicine recommended that a similar system be developed for violent deaths in its 1999 report, *Reducing the Burden of Injuries*.² In response, the Injury Control Research Center at the Harvard School of Public Health, with support from the Centers for Disease Control and Prevention (CDC), performed a pilot study, the National Violent Injury Surveillance System (NVISS), which included both fatal and non-fatal injuries. Subsequently, Congress mandated the development of the National Violent Death Reporting System (NVDRS) in the FY2002 federal budget. In the first year of the NVDRS, the CDC enrolled six states; in FY2003, Congress appropriated funding to add eight more states. As designed by the CDC, the NVDRS assembles and links information on each violent death from four sources: death certificates, medical examiner investigations, police crime reports, and crime laboratory findings. The Rhode Island Department of Health has applied to join the NVDRS and has analyzed death certificate data and medical examiner data for 1999-2002 in support of its application.

Methods. Violent deaths occurring in Rhode Island in 1999-2002 were identified in the Vitals Records death files using the underlying cause of death (UCOD) codes specified by the NVDRS. (Table 1) Cases were aggregated by patient demographics (age, sex, race, and place of residence) and by information from the UCOD on intent to injure (assault, self-inflicted, unintentional, undetermined) and mechanism of injury (firearms, suffocation, poisoning, etc.).³ [Note: The large majority of deaths of undetermined intent are deaths due to overdoses of drugs, including prescription, over-the-counter, and illegal drugs, where possible suicidal intent and accident could not be distinguished. Such deaths are included in the broad definition of violence used in the NVDRS.]

Results. There were 776 deaths in Rhode Island during 1999-2002 that meet the NVDRS definitions for violent deaths, an average

Table 1. Definition of Cause of Death Groups Used by the National Violent Death Reporting System

Cause of Death	ICD-10* Codes
Suicide	X60-X64, Y87.0
Homicide	X85-Y09, Y87.1
Undetermined intent	Y10-Y34, Y87.2
Legal intervention	Y35, Y89.0
Other firearm	W32-W34
Late effects of injury	Y86, Y89.9

*International Classification of Diseases, 10th Revision

of 194 deaths per year. Of these, the largest proportion were suicides (82.5 per year), followed by deaths from drug overdoses or other undetermined intent (66 per year), homicides (39.3 per year), late effects of injuries (6.0 per year), and other firearms injuries (0.3 per year). (Figure 1)

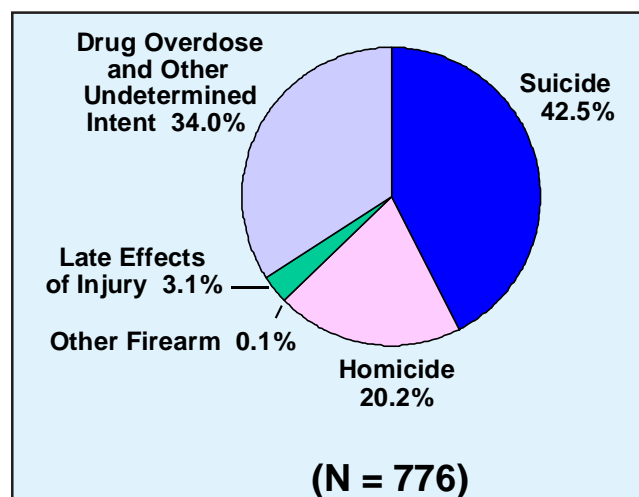


Figure 1. Proportion of violent deaths by NVDRS category, Rhode Island occurrences, 1999-2002.

Violent deaths in the state were clustered among residents ranging in age from adolescence to middle age. (Figure 2) Median age at death was 38 years; median ages for suicides (41 years) and deaths from drug overdoses or other undetermined intent (40 years) were higher than for homicides (27 years). By gender, 74.2% were male. By race and ethnicity, the proportion of violent deaths among African-Americans (10.6%) was higher than the proportion of African-Americans in the 2000 Census for Rhode Island (4.5%).

The mechanism of injury varied greatly according to the characterization of intent. Among homicides, the majority of deaths (63.7%) were caused by firearms injuries; among suicides, the

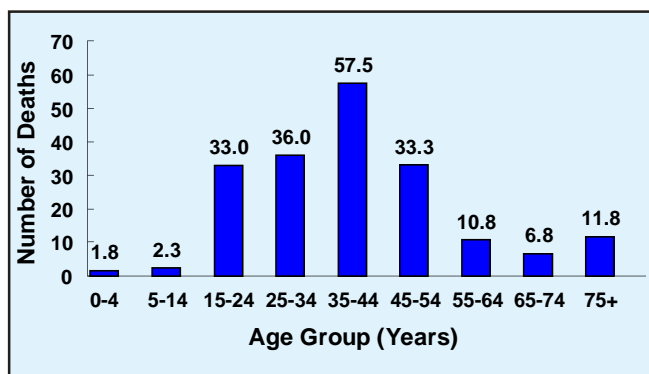


Figure 2. Annual average number of violent deaths, by age group, Rhode Island occurrences, 1999-2002.

proportion caused by firearms was lower (35.5%), and there were no deaths of undetermined intent from firearms. (Figure 3) Deaths caused by sharp force such as knives were most common among homicides (17.2%), much less common among suicides (1.8%), and not appearing at all among deaths of undetermined intent. Conversely, there were no homicides by drug overdoses or poisonings, but this category comprised the third most common mechanism of suicide (17.6%) and nearly all (91.7%) deaths of undetermined intent. Death by asphyxiation (hanging, suffocation) was far more common among suicides (34.2%) than among homicides (1.8%) or deaths of undetermined intent (1.1%).

Discussion. Death rates for injuries, including violent injuries, are generally lower in Rhode Island than nationally,⁴ but these deaths occur among residents in their most productive years and hence represent a substantial burden of premature mortality. It is likely that many of these deaths are preventable through a variety of proven public health interventions that address violent and suicidal behaviors and complement law enforcement, mental health, and substance abuse prevention activities.

If the Rhode Island application to participate in the NVDRS is successful, the substantial additional information assembled on the violent deaths occurring here will meet a number of goals. It will help reveal the underlying patterns of violence and suicide, support the development of violence and suicide prevention strategies and programs, and allow the scientific evaluation of those programs' success. Participation in the NVDRS will help establish partnerships between public health and other organizations involved in violence prevention in the state and municipalities, notably law

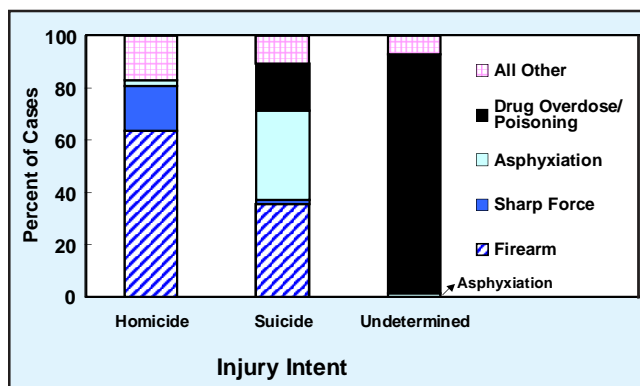


Figure 3. Proportion of violent deaths by mechanism of injury and intent, Rhode Island occurrences, 1999-2002

enforcement agencies. And it will enhance federal-state collaborations against violence through the sharing of surveillance data and evaluation results.

Jay S. Buechner, PhD, is Chief, Office of Health Statistics, and Clinical Assistant Professor of Community Health, Brown Medical School.

Elizabeth A. Laposata, MD, is Chief Medical Examiner and Clinical Associate Professor of Pathology and Laboratory Medicine, Brown Medical School.

Wendy Verhoeck-Oftedahl, PhD, is Assistant Professor of Community Health (Research), Brown Medical School.

Edward F. Donnelly, RN, MPH, is Senior Public Health Epidemiologist, Office of Health Statistics, and Clinical Teaching Associate, Department of Community Health, Brown Medical School.

References

- Centers for Disease Control and Prevention, *Program Announcement 03038: Cooperative Agreement for Development of the National Violent Death Reporting System*. Atlanta GA. March 2003.
- Committee on Injury Prevention and Control, Institute of Medicine, Bonnie RJ, Fulco CE, Liverman CT, eds. *Reducing the Burden of Injury: Advancing Prevention and Treatment*. Washington DC: National Academies Press. 1999.
- Centers for Disease Control and Prevention. National Center for Health Statistics. *External Cause of Injury Mortality Matrix for ICD-10*. Hyattsville MD. www.cdc.gov/nchs/data/ice/icd10_transcode.pdf
- Rhode Island Department of Health. *Healthy Rhode Islanders 2010: Draft Objectives and Targets*. Providence RI. August 2001.

Originally published in the August 2003 issue of Medicine & Health / Rhode Island

Rhode Island Department of Health
Office of Health Statistics
3 Capitol Hill
Providence, RI 02908

Change service requested
401 222-2550

HEALTH

PRSRT_STD
U.S. Postage
PAID
Providence, R.I. 02904
Permit No. 1286